



Patent

Attorney's Docket No. 000500-301

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)	Box: Non-Fee Amendment
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Anette BUSCHKA et al.)	Group Art Unit: 1771
)	
Application No.: 09/870,517)	Examiner: E. Cole
)	
Filed: June 1, 2001)	Confirmation No.: 9594
)	
For: A TEXTILE FIBRE REINFORCED)	
ABSORBENT MATERIAL)	
)	
)	

RESPONSE

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Responsive to the Office Action dated November 15, 2002, setting forth a three-month period for response, kindly find enclosed the following remarks. This Response is filed timely on February 19, 2003, as the U.S. Patent and Trademark Office was officially closed on February 18, 2003.

In view of the following remarks, reexamination, reconsideration, and allowance of the above-captioned application is respectfully requested.

Initially, the Examiner is thanked for initialing and returning a copy of the Information Disclosure Statement submitted on June 1, 2001. However, an initialed copy of the Supplemental Information Disclosure Statement submitted on July 18, 2001 has not been returned to the undersigned. The Examiner is therefore requested to initial and return a copy of the Supplemental IDS submitted on July 18, 2001 to the undersigned.

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The Examiner is also thanked for acknowledging a claim for domestic priority under 35 U.S.C. § 120 or 121. The Applicants' claim for priority of Application No. 9602156-3, filed on May 31, 1996 in Sweden, has not yet been acknowledged. Acknowledgment of this priority claim is respectfully requested.

Pages 3 and 4 of the Office Action set forth a rejection of Claims 1-32 under 35 U.S.C. §103(a) as allegedly being obvious based on the disclosure of U.S. Patent No. 3,984,898 to *Matsumura et al.* in view of U.S. Patent No. 4,018, 646 to *Ruffo et al.* Applicants respectfully request reconsideration of this rejection.

Turning first to Claims 16-25, independent Claim 16 is directed to a method for producing an absorbent material that includes a mat of dry-laid cellulose fibers integrated with an air-laid non-woven gauze comprised of reinforcing textile fibers. The method includes air-forming textile fibers with an air-doffing apparatus on a wire to form a non-woven gauze, and directly dry-laying the cellulose fibers on the newly formed non-woven gauze of textile fibers to integrate the cellulose fibers with the non-woven gauze and form a mat, wherein the cellulose fibers achieve a sufficient bonding with the textile fibers without any bonding agent.

The process and material described in *Matsumura et al.* is very different. In *Matsumura et al.*, a long fiber defibrating unit 150 feeds long fibers to a chute which directs the long fibers to a wire. A shredder 171 and a refiner 170 produce short fibers of wood pulp. The disintegrated short wood-pulp fibers are then suspended in an air stream and dispensed onto the layer of long fibers. See column 4, lines 11-22 and Figure 6 of *Matsumura et al.* This process forms a layer of long rayon fibers on one side of the mat, a

layer of wood-pulp fibers on the other side of the mat, and a mixed layer of rayon and wood-pulp in between the two outer layers. See column 2, lines 56-60. If less rayon is used, the mat can have just a layer of wood-pulp fibers on one side and a layer of mixed rayon and wood-pulp on the other side. See column 2, lines 60-64. Thereafter, the *Matsumura et al.* process includes a step of spraying one surface of the mat with an adhesive product and then passing the mat through a drying section to dry and set the adhesive, then spraying the other surface of the mat with an adhesive and again passing the mat through a drying section to dry and set the adhesive. See column 9, lines 54 - column 10, line 6.

As disclosed in the specification of the present application, the mats formed by the *Matsumura et al.* process will have only weak bonds at the interface between the layer of the wood pulp and the layer containing the long fibers, making a binder necessary. *Matsumura et al.* itself also recognizes that binder is necessary to prevent delamination. See col. 3, lines 32-48 and col. 9, lines 38-54.

In contrast, in the method of Claim 16, it is the combination of air-forming the textile fibers with an air doffing apparatus to form a non-woven gauze and the step of directly dry-laying the cellulose fibers on the newly formed non-woven gauze which achieves the sufficient bonding between the cellulose fibers and the textile fibers so that bonding agent, such as the adhesive agent of *Matsumura et al.*, is not needed.

The Office Action acknowledges that *Matsumura et al.* does not disclose that the cellulose fibers achieve a sufficient bonding with the textile fibers without any bonding agent. To remedy this deficiency, the Office Action relies upon the disclosure of *Ruffo et*

al. In particular, the Office Action asserts that *Ruffo et al.* "teaches that employing a bonding agent and mechanically interlocking the fibers are both known and equivalent methods of bonding fibrous webs comprising cellulosic fibers and reinforcing fibers". Applicants respectfully disagree.

Ruffo et al. discloses a method in which a gaseous stream of short fibers (less than 1/4 inch in length) and a gaseous stream of long fibers (longer than 1/4 inch in length), are combined together to form a single gaseous stream. The short and long fibers in the gaseous stream are then applied onto a selectively permeable cylinder or a movable wire screen or conveyor belt. See column 8, lines 45-55, column 4 lines 55-62, and column 1, line 20-35. At column 12, line 61 - 65, *Ruffo et al.* discloses that the web is subsequently treated "to bond the web and to provide the required strength and coherency characteristics for a given product".

Ruffo et al. discloses several bonding processes, including the use of a needle loom, spray application of an adhesive, and printing of an adhesive, among others. Instead of disclosing that these processes are equivalent, *Ruffo et al.* identified which processes are appropriate for bonding different types of webs.

Ruffo et al. does **not** disclose that use of a needle loom and spray application of an adhesive are equivalent, and instead, identifies which bonding processes are appropriate for different types of products. At column 13, lines 34-41, *Ruffo et al.* discloses that needle looms can be employed to bond soft fiber webs. At column 13, lines 42-50, *Ruffo et al.* discloses that spray bonding techniques are used for high loft products, e.g., air filters. At column 13, lines 16-21, *Ruffo et al.* discloses that for forming webs in which softness and

absorbency is required, it is preferred to print a bonding agent onto the web. Thus, the *Ruffo et al.* bonding processes are not equivalent.

Further, the *Ruffo et al.* web is formed by depositing both long and short fibers which are mixed together in a single gaseous stream, and will have both long and short fibers throughout the web. In contrast, the *Matsumura et al.* mat will have a layer which has only short wood-pulp fibers. There is no disclosure or suggestion in *Ruffo et al.* that needle looms could be used to bond layers in which one layer has **only** short wood-pulp fibers, as is the case in the *Matsumura et al.* mat.

Ruffo et al. also provides no guidance or suggestion that needle looms should be used for absorbent materials. Instead, *Ruffo et al.* discloses that for webs in which softness and absorbency is required, it is preferred to **print** a bonding agent onto the web, column 13, lines 16-21.

For these reasons, *Ruffo et al.* does not provide any suggestion or guidance for modifying the process of *Matsumura et al.* to replace the adhesive spraying steps with a step of perforating the layers with a needle loom.

Further, if a needle loom of *Ruffo et al.* were applied to the *Matsumura et al.* mat, the needle loom's barbs would perforate the *Matsumura et al.* mat, altering the macrostructure of the perforated layers. As a result, the absorbency characteristics of the mat are likely to be harmed. For example, liquid will not be absorbed homogeneously throughout the perforated layer. Further, the distribution of liquid in a horizontal direction through the layer would also be affected. In contrast, absorbent materials formed by the method set forth in claim 16 can advantageously have homogeneous absorption throughout

the layer. Thus, modifying the *Matsumura et al.* process to use a needle loom could adversely affect the resulting absorbent layers. Where a modification of the prior art device would render such device inoperable for its intended purpose, the mere fact that the prior art device could be so modified would not have made the modification obvious. In re Gordon, 221 USPQ 1125, 1127 (Fed. Cir. 1984). For at least these reasons, one of ordinary skill in the art would not replace the spray bonding steps of *Matsumura et al.* with the needle loom of *Ruffo et al.*

In order to establish a prima facie case of obviousness, the references must teach or suggest all of the claimed limitations. See, e.g., M.P.E.P. §§ 2143-2143.03. As *Matsumura et al.* and *Ruffo et al.* do not teach or suggest all the claimed limitations, it is respectfully requested that the rejection of Claims 16-25 under 35 U.S.C. § 103(a) be withdrawn.

Claims 26-28 and 32, directed to a method for producing an absorbent product, are believed to be allowable over the hypothetical combination of *Matsumura et al.* and *Ruffo et al.* for the same reasons that Claim 16 is allowable. Accordingly, withdrawal of the rejections of Claims 26-28 and 32 is respectfully requested.

Independent Claim 30 makes clear that the structure is absorbent, and that the cellulose fibers are directly dry-laid on a non-woven gauze of textile fibers to achieve a sufficient bonding between the cellulose fibers and the textile fibers without any bonding agent. Accordingly, Claim 30 is believed to be allowable for at least the same reasons that Claim 16 is allowable.

Turning next to Claims 1-15 and 31, independent Claim 1 makes clear that the absorbent material is obtained by dry-laying the cellulose fibers on a newly formed gauze of textile fibers so that the cellulose fibers achieve a sufficient bonding with the textile fibers without any bonding agent.

As acknowledged by the Office Action, and as addressed at pages 3 and 4 of the specification, *Ruffo et al.* does not disclose an absorbent material having the claimed features. Nor does *Ruffo et al.* disclose that mechanical needling is equivalent to spray bonding. As described in the previous paragraphs addressing Claims 16-25, *Ruffo et al.* provides no guidance for using a needle loom for bonding layered mats such as those in *Matsumura et al.* Accordingly, Claims 1-15 and 31 are believed to be patentably distinct over even a hypothetical combination of *Matsumura et al.* and the *Ruffo et al.* Withdrawal of the rejection of Claims 1-15 and 31 under 35 U.S.C. § 103(a) is therefore respectfully requested.

Page 2 of the Office Action sets forth a rejection of Claims 1-3, 7-10, 29, 31 and 32 under 35 U.S.C. §102(b) as anticipated by or, in the alternative as being obvious under 35 U.S.C. §103(a) based on the disclosure of *Ruffo et al.* Page 5 of the Office Action sets forth a rejection of dependent Claims 4-6 and 11-15 as being obvious under 35 U.S.C. § 103(a) based on the disclosure of *Ruffo et al.* Applicants respectfully request reconsideration of these rejections.

Initially, it is noted that claim 32 is directed to a process for forming an absorbent product, rather than to the absorbent product itself. Because Claims 1-15, 29, and 31 are all directed to the absorbent material, structure, or product, it appears that Claim 32 may

have been included in this grouping inadvertently. Therefore, withdrawal of the rejection of Claim 32 under 35 U.S.C. § 102(b) or § 103(a) based on *Ruffo et al.* is respectfully requested.

Claim 1 recites that an absorbent material comprising a mat of dry laid cellulose fibers integrated with an air laid non-woven gauze comprised of reinforcing textile fiber materials is obtained by directly dry-laying the cellulose fibers on the newly formed gauze of textile fibers so that the cellulose fibers achieve a sufficient bonding with the textile fibers without any bonding agent.

The Office Action categorizes this claim as a product-by-process claim, and states that "once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to the Applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product".

Applicants respectfully disagree that the *Ruffo et al.* disclosure is sufficient to shift the burden of proof to the Applicant under either 35 U.S.C. § 102 or § 103. The unsupported assertion that "the material of Ruffo et al. appears to be the same as the claimed invention even though it may not be produced in the same way" is insufficient to support a *prima facie* case of anticipation or obviousness.

As set forth in *In re King*, 801 F.2d 1324, 231 U.S.P.Q. 136, 138 (Fed. Cir. 1986), "Before the Patent Office can require that an Applicant prove that a prior art product is different than the claimed product, the Patent Office must set forth a *prima facie* case of anticipation or obviousness." The standard for establishing a *prima facie*

case of either anticipation or obviousness is higher than that set forth at pages 3 and 5 of the Office Action. The Office Action must do more than provide "a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art". According to *In re Brown*, 459 F.2d 531, 173 U.S.P.Q. 685, 688 (1972) a rejection based alternatively on either §102 or §103 is acceptable when "the prior art discloses a product which *reasonably appears to be either identical with or only slightly different than a* product claimed in a product-by-process claim" (emphasis added). In *Ex parte Gray*, 10 U.S.P.Q. 2d 1922, 1929 (1989), the Board of Patent Appeals and Interferences explained *In re Best*, 195 U.S.P.Q. 430, and *In re Brown, id.*, as holding that "the disclosure of *substantially* identical material is sufficient to establish a *prima facie* case of obviousness and shift the burden of proof to Appellants". Further, *In re Spada*, 911 F.2d 531, 15 U.S.P.Q.2d 1655, indicates that the "virtual identity of monomers and procedures sufficed to support a *prima facie* case of unpatentability" of polymer latexes having identical monomers and the same or similar processes.

The Office Action has not set forth a reasonable basis for believing that the *Ruffo et al.* non-woven web is "virtually identical" to the claimed web. Indeed, the *Ruffo et al.* material web is very different the claimed material, just as the *Ruffo et al.* process is very different than the process for forming the claimed material.

First, Claim 1 is directed to an *absorbent* material. *Ruffo et al.* distinguishes between materials requiring softness and absorbency, which are suitably bonded by print bonding, on one hand, and soft fiber webs, joined with a needle loom, on the other hand.

Thus, *Ruffo et al.* does not disclose an *absorbent* material having sufficient bonding between cellulose fibers and textile fibers without any bonding agent.

Next, the Claim 1 absorbent material includes both a gauze of textile fibers and cellulose fibers bonded to the textile fibers. *Ruffo et al.* does not disclose such a gauze of textile fibers. Instead, the layer produced by the *Ruffo et al.* process produces a single web with long and short fibers mixed together throughout the layer. Further, *Ruffo et al.* makes clear that the web requires a subsequent bonding step. In contrast, the absorbent material set forth in Claim 1 achieves a sufficient bonding between the cellulose fibers and the textile fibers without any bonding agent.

The *Ruffo et al.* process is also very different than the process set forth in the claims. As discussed above, *Ruffo et al.* discloses joining a first fiber in a gaseous stream with a second fiber in a gaseous stream, and combining the gaseous streams into a combined carrier stream wherein "the fibers from each gaseous stream intermix with one another". See column 4, lines 60-65. Subsequently, the fibers from the *Ruffo et al.* combined stream are condensed on a selectively permeable cylinder or a movable wire screen or conveyor belt. In contrast, the claimed absorbent material is formed by directly dry-laying cellulose fibers on a newly-formed non-woven gauze of textile fibers.

For at least these reasons, there is no reasonable expectation that the material set forth in Claim 1 will be either identical to or substantially identical to the material of *Ruffo et al.* Thus, the Office Action has not set forth a *prima facie* case of either anticipation or obviousness based on *Ruffo et al.*

Accordingly, withdrawal of the rejection of Claim 1, dependent Claims 2-16, and Claims 29 and 30 is respectfully requested.

Should the Examiner have any questions regarding this response, or about the application in general, she is earnestly requested to contact the undersigned attorney at the number listed below in order to expedite prosecution of the application.

Respectfully submitted,

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